Notes on conditional states and symmetric differences

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The theory of orthomodular lattice and its relationships that depend on s-map and conditional states definitions has shown in several types of probabilistic relations. An orthomodular lattice with a conditional states can be applied and defined as a model for non-compatible events. Studying of s-maps or conditional states on an orthomodular lattice helps us to describe such properties of random events, which are difficult to be described by Boolean algebra. In a particularly observed quantum or classical system the information, that we cannot access results in our description of the system be coming mixed even if we have perfect initial knowledge.

That is, if the system is quantum the conditional states will be given by a state matrix and if classical, the conditional states will be given by a probability distribution. We show conditions when a quantum system has the same properties as the classical probability space.

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